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ABSTRACT

The report focuses on the development of measurement instruments and criteria for forming statements about student attributes which should result from career education. Two measurement instruments (the Assessment of Career Development and Career Maturity Inventory) were tested on approximately 15,000 9th and 11th graders in Texas. Questionnaires based on the results of the survey were sent to educators to gather their opinions regarding the usefulness of the instruments. The results showed that no preference between the two instruments existed. Results from the student survey indicated some degree of career maturity and ethnic differences among students. Criteria for career education student accomplishment were developed based on the question: What does an individual "look like" when he or she is 17 years old and has become adequately developed in terms of career education? A total of 279 learner outcomes were identified and rated in a Statewide survey of students, parents, educators, and persons from business and industry. These were reduced to 177 learner outcomes which were compared with areas covered previously by the two instruments. The results showed that only 11 percent of the outcomes were measured either partially or indirectly. Surveys, questionnaires, and other related materials used in the study are appended. (Author/EC)

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CAREER EDUCATION

AN INITIAL LOOK

CE005964

A NEEDS ASSESSMENT REPORT

Texas Education Agency

Austin, Texas 1973

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FOREWORD

The Texas Education Agency is giving high priority to career education in the elementary and secondary schools of Texas. Needs assessment and evaluation are planned as integral parts of this total effort.

This document is a report of the 1972-73 career education assessment activities. These activities will provide a basis for the long-term development of a measurement and a diagnostic system for pupil achievement in career education.

If you have questions about these activities or desire further clarification on some feature of this report, please contact

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The Assessment of Career Education Steering Committee spent many hours in reviewing background information and making decisions about procedures. The members of this committee and their areas of responsibility in the Texas Education Agency are:

Dale Carmichael, Administration
James Clark, Regional Guidance Services
Keith Cruse, Co-chairman, Office of Planning
Walter Howard, Co-chairman, Office of Planning
Walter Rambo, Career Education
Marvin Veselka, Program Development
Jerry Vlasek, Special Education

Many other Agency staff members gave much of their time to assist with the work of the Steering Committee.

The staff members of the "Partners in Career Education", a project located in Arlington that is sponsored by the Dallas and Fort Worth School Districts and the Education Service Centers in Richardson and Fort Worth, assumed major responsibility for developing the statements of "learner outcomes" for career education and for conducting the survey to get the reactions of Texas citizens to these statements.

The cooperation of the 20 education service centers and the schools in each region that were selected for the pilot testing was excellent. This participation is especially appreciated in a pilot effort when the usefulness of the results to a school is of an unproven quality.

Finally, a word of thanks needs to be expressed to the thousands of Texas students who participated in the pilot testing, and to the large number of Texas citizens from all walks of life who cooperated by rating the outcomes. It is likely that most of these people will never see this report. However, their time and effort to establish clear definitions will provide a sounder basis for future activities in career education.

ABSTRACT

This document was written to serve two purposes: (1) Trace the history of the career education assessment plan, and (2) Present a philosophical basic for continued development.

Career education, one of the top priorities selected by the Texas Education Agency for strong statewide emphasis, reflects both the opinions and the plans of major program areas. This diversity of viewpoint was assured by the appointment of the Assessment of Career Education Steering Committee (ACE), a planning group drawn from all Agency divisions concerned with the curriculum and services to students.

This committee concentrated its effort in two key areas. First, it was concerned with a series of well-defined statements about student attributes which should result from career education. Second, it focused attention on existing measurement instruments and criteria for developing new ones.

Two measurement instruments selected from a nationwide survey of some 70 potential sources were selected for further testing in Texas. The Assessment of Career Development and the Career Maturity Inventory were used with approximately 15,000 ninth and 11th graders attending Texas public schools. Selected schools represented various geographic locations and ethnic backgrounds of students.

Then, questionnaires based on the results of this student survey were sent to principals, counselors, and teachers in order to gather their opinions regarding the usefulness of information gathered by the two test instruments. There was little difference in reaction to the two. In general, the response would not discourage further use of either instrument.

A review of overall results indicates some degree of career maturity does exist between the two grades. Also, some ethnic differences were noted in total scores and in reactions to certain questions.

The ACE Steering Committee, working in cooperation with the Partners in Career Education, an Arlington-based project, developed criteria for career education student accomplishment. The Partners in Career Education project is sponsored by the

Dallas and Fort Worth independent school districts and Education Service Center Region X in Richardson and ESC Region XI in Fort Worth.

These statements or criteria were based on the question: What does an individual "look like" when he or she is 17 years old and has become adequately developed in terms of career education? Because the statements would tell how or to what degree the person should behave, they are called learner outcomes.

These learner outcomes were developed from a number of sources, including a search of the literature, on-site visits to schools both in and out of the state, and meetings of students, educators, parents, and representatives of business and industry. A total of 279 learner outcomes was identified.

These outcomes, divided into 10 different instruments, were submitted to a cross-section of students, parents, educators, and persons from business and industry for rating as basic, desirable, or inappropriate. The 279 total was cut to 177 by this statewide survey.

These 177 basic learner outcomes were then compared with areas covered by the two measurement instruments used earlier. The result? Only 11 percent of the outcomes were measured either partially or even indirectly.

Information gathered through this series of events forms the basis for the following recommendations by the ACE Steering Committee. Future assessment activities should:

(1) Measure the basic learner outcomes as directly as possible.

(2) Provide information useful to classroom teachers.

(3) Serve as the basis for career education curriculum planning and development.

(4) Support evaluation of long-term gains in the career development of Texas students.

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INTRODUCTION

The Texas Education Agency has developed a Statewide Framework for Educational Planning which provides for a sequencing of activities for areas of priority concern for education of Texas pupils. The Planning Framework suggests that study questions be developed for each area of concern to guide the collection of relevant information through a needs assessment. Further steps in the Planning Framework indicate the development of statewide learner objectives and Agency operating objectives based on the results of the needs assessment study.

In 1972, the State Board of Education selected career education as one of nine statewide priority areas of concern. Within the Texas Education Agency, a Steering Committee for the Assessment of Career Education (ACE) was appointed to plan the steps that would lead to a statewide study to determine the status of pupils in this area. The Committee has representation from the Agency divisions of program development, administration, guidance, vocational education, special education, career education, and planning.

The "initial look" presented in this publication, is a report about the developmental activities that were undertaken by the ACE Committee under its charge of planning for an assessment in career education. As a place to begin, the Committee adopted a set of questions for which an assessment should provide answers (Appendix A). These study questions provided the initial thrust for the events that are reported here.

Throughout these developments, the ACE Steering Committee worked in cooperation with the "Partners in Career Education" project. Partners, located in Arlington, Texas, is sponsored by the Dallas and Fort Worth School Districts and the Education Service Centers in Regions X and XI. The Partners staff is involved with developmental planning for career education in the North Texas area. Their participation in these assessment activities is a part of their overall functions.

An assessment of the status of pupils is usually predicated on clear definitions of what pupils should be like so that measurements can be taken and comparison can be made between "what should be" and "what is." When this rationale was applied to the Assessment of Career Education, it was found that no clear definitions were available which could be used for a statewide assessment.

These statements of what career education "should be" had to be developed. Because the concern about career development extends beyond the school surroundings, Texas citizens were given their opportunity to provide suggestions and to make judgments about these statements.

Since measurement instruments based on different concepts about career education were available, it was decided that an investigation of these should accompany development of the definitions. After a careful review, two instruments were selected for pilot testing. The pilot testing was designed to determine whether the information from the measurement instruments was beneficial for individuals and school personnel, not only as a status report but also as a guide for planning instruction. The information would also contribute to knowledge about the usefulness of the reports for regional and statewide planners.

The final evaluation of the usefulness of the measurement instruments was the extent to which they measured the definitions of career education. If a significant percentage of the definitions were addressed by the instruments, they might be recommended for use in a statewide assessment. If most of the definitions were not measured, new instruments would have to be developed.

An examination of the Activity Flowchart (Appendix B) shows the major steps used in carrying out the plans reported in this publication.

PILOT TESTING OF AVAILABLE INSTRUMENTS

Instrument Selection

A letter asking for any available instruments that would help answer the study questions was sent to approximately 70 different commercial test companies, education development laboratories, educational consultants, and university research and development organizations. Thirteen instruments (Appendix C) were received for review by the Steering Committee.

The Steering Committee and the Assessment staff reviewed each of the 13 instruments submitted. Responses were tabulated and reported in summary form to the Steering Committee. Although there was not complete agreement on the rating of any one instrument, the majority of the members felt that the Assessment of Career Development and the Career Maturity Inventory were the two instruments which seemed to be most useful in answering some of the study questions and in providing information that would assist program planners in schools, education service centers, and the Texas Education Agency. In early January 1973, these instruments were reviewed by representatives of several school districts and education service centers. They agreed that both instruments would provide information useful for schools and recommended them for pilot testing in the spring.

Measurement Instruments Used for Pilot Testing

The Career Maturity Inventory (CMI) published by CTB/McGraw-Hill, Inc. consists of the Attitude Scale and the Competence Test. The Attitude Scale contains 50 true-false items. The items are derived from statements that exhibit attitudes of different levels of maturity in career development. The Competence Test contains five parts: self-appraisal (Part I, Knowing Yourself), occupational information (Part 2, Knowing About Jobs), goal selection (Part 3, Choosing a Job), planning (Part 4, Looking Ahead) and problem solving

(Part 5, What Should They Do?). Each part is made up of 20 questions that measure the more cognitive aspects of career development.

The publisher provides reports that give results in such forms as frequency distribution of individual scores and cumulative percentages, summaries for the school including measures of central tendency based on the pupils in that school, right response records, and other statistical information so the reports can be used by the school for further investigations.

The Assessment of Career Development (ACD) published by the American College Testing program, is structured around self-awareness, occupational awareness, and career planning components of career development. The instrument is divided into six units. The first unit is concerned with knowledge about occupational characteristics and occupational preparation requirements. In the second unit pupils are asked to select from a listing those things about a job environment that might be important to the individual in considering a career. Unit three asks questions about the amount of education a student plans to complete in his lifetime, asks for him or her to indicate a first and second job choice, and asks how sure the student is about the duration of the choices. The fourth unit is divided into parts that ask questions about the pupil's involvement in career exploratory and planning experiences, how he or she feels about the career guidance help provided at the school, and if the student would like help in specific areas that relate to career development. Unit five has questions about facts, concepts, and understandings, which are suggested to be useful in career planning. The sixth unit contains lists of career-related skills or experiences that a student might participate in outside the classroom and the student is asked to indicate the degree to which he or she might have participated in any of these.

The information about results from the ACD consists of group summary reports and student list reports. The group summary reports give the score distribution on 16 different scales and give item-analysis reports on 38 selected questions. A student list report is provided for each person tested. It includes his or her scores on the 16 scales and the individual's responses to 26 selected questions.

Arrangements were made with both publishing companies to print additional questions that the ACE Steering Committee wished to have answered. These questions were included to get more background information about the students taking the tests and to receive their reactions about the two instruments. The questions were worded so the responses could be collected on the same answer sheets used with the instruments.

Selection of Campuses for Pilot Testing

The procedure for selecting the campuses was tailored to satisfy the purpose of the pilot testing within the limits that were available to the ACE Steering Committee. The purpose of the pilot testing was to obtain answers to the following questions:

1. How useful do personnel employed on campuses of various types (sizes, ethnic compositions, and geographic locations) anticipate the results of the instrument administered on their campuses will be?
2. Does each of the instruments reveal growth (maturity) of students from grade nine to grade 11?
3. Are the instruments sensitive to the effects of a career education program implemented by certain schools?

Selecting participants to serve the above purpose involved the following considerations:

1. On each campus selected, all pupils of a specified grade should complete one of the instruments. The alternative of having only a portion of the pupils on a campus complete an instrument would restrict the usefulness, for the personnel employed on the campus, of the results.
2. For each instrument, the group of participating campuses should include at least one campus of each size, ethnic composition, and geographic location. Such distribution will permit relationships, if any, between usefulness of the results and these campus characteristics to surface.

3. The instrument assigned to some of the campuses should be administered in both the ninth and 11th grades. Measurements on the same campus should give an indication of whether there is growth between the ninth and 11th grades.
4. Some of the campuses selected for participation should have offered their pupils a career education program and should be matched with campuses which did not offer the program. Comparison of the matched campuses would reveal the sensitivity of the instrument to a career education program.
5. One campus was to be selected from each of the 20 education service center regions.

Meeting the above considerations, within the allocated number of instruments, limited the number of campuses which could participate to 20 for the ACD and about double that number for the CMI. Obtaining two groups of campuses representative of those in the state (one for the ACD, the other for the CMI) was not feasible within the requirements. A pick-and-choose, rather than a random selection procedure, was necessary. The focus of the selection process was placed upon

- including at least two examples (one to administer the ACD, the other the CMI) of each of several types of campuses, and
- including campuses from all 20 ESC regions, and
- including campuses appropriate for determining the sensitivity of the instruments to a career education program.

Six campuses were chosen to serve as three pairs of examples:

1. very large metropolitan campuses with a predominantly black ethnic composition
2. very large metropolitan campuses with a predominantly Mexican American ethnic composition
3. very large metropolitan campuses with a predominantly Anglo ethnic composition

The two predominantly black campuses were in the same school district; the same is true for the two predominantly Anglo

campuses. The two predominantly Mexican American campuses were in the same city, but not in the same school district. The ACD was administered to both the ninth and 11th grades by one member of each pair and the CMI was administered to the other member. On no other campus was the ACD administered in the ninth grade.

Nine campuses where Occupational Orientation had been offered in the eight grade the previous year were chosen to administer the CMI to their ninth grade pupils only. Four of the nine were "paired" with a campus similar in size, ethnic composition, and geographic location; on these four campuses, the CMI was administered in both the ninth and 11th grades. One additional campus was selected to administer the CMI to its ninth grade.

The remaining instruments were reserved for administration to grade 11 pupils only. The major concern during the selection of the campuses to administer the remaining instruments was to achieve a reasonably even distribution among campuses of the 20 ESC regions, yet include campuses of various sizes and ethnic compositions. Seventeen of the campuses whose pupils were tested at the 11th grade only were assigned the ACD and 20 the CMI.

The distribution of the selected campuses may be found in Appendix D.

Implementation of the Pilot Testing Program

The executive director of each of the 20 education service centers in Texas named a contact person on his staff to cooperate with the Assessment of Career Education Steering Committee in implementing the pilot testing program in the region. This person was in most instances the regional career education coordinator.

The superintendent of each school district with a school selected for the sample was notified about the study and asked to cooperate by means of a letter from the Commissioner of Education. The regional contact person then called on the Superintendent and the school selected in the sample

to explain the pilot testing program and get their agreement to participate. A school contact person was then named in order to facilitate communications about the study among the school, regional education service center, and the ACE Steering Committee.

Pre-test workshops were held throughout the state during the period of March 5-13, 1973. These workshops were conducted to familiarize the regional contact persons and the school personnel with the test administration procedures and the interpretation of results. Members of the ACE Steering Committee and representatives from both test publishing companies participated in the workshops. Seven workshops were held for explanation of the Career Maturity Inventory and five for the Assessment of Career Development.

Administration of the Test Instruments

Fifty-eight schools participated in the pilot testing. In 10 of these schools both the ninth and 11th grades were tested. Twenty administered the Assessment of Career Development (ACD) and 38 the Career Maturity Inventory (CMI).

The administration of the instruments, collection of answer sheets, and return of the booklets, were under the direction of the school personnel on each campus. The regional contact person assisted by briefing the school people about details of the administration and handling of any emergencies that arose. The period of test administration was March 17 through April 1, 1973.

The test answer sheets were returned to the publisher for scoring. A total of 3780 students responded to the ACD and 7440 to the CMI. Each school received a complete report that had been developed for use with the particular instrument. Representatives from both publishing companies made themselves available to assist schools in interpreting results. Because of time constraints caused by the closing of school and the scattering of pilot sites all over the state, no formal, post-test workshops were conducted by regional education service centers or by the ACE Steering Committee.

Usefulness of the Instruments

A primary concern of the pilot study was to determine how useful the principals, counselors, and teachers believed the results could be. The principal and the counselor of each participating school, plus a few teachers, received questionnaires which asked them to circle the response which expressed how useful they believed the results would be to them in their interactions with other school personnel and with pupils. Tables A, B, and C summarize the ratings.

The most impressive finding is the extreme diversity of responses among the principals, among the counselors, and among the teachers. The differences in ratings between the two instruments are insignificant compared with differences in the ratings within each instrument. In only one case were the differences between instruments statistically significant (at the .05 or higher level of confidence); principals whose campus received the ACD gave higher ratings in response to the question, "How useful do you feel the results can be in curriculum planning?"

The wide variability in the ratings could not be attributed to differences in the size, location, or ethnic composition of the campuses on which the personnel of a particular category of rater was employed. Detailed analyses did not reveal that the ratings were related to campus characteristics.

Tables A, B, and C reveal that the principals and counselors had a strong tendency to feel that, if the assessment had occurred earlier in the school year, the results would have been of enough value to justify the time spent in testing. The same tendency, although considerably weaker, was found among teachers.

Tables A, B, and C reveal a tendency (not statistically significant) for principals and teachers to feel that the results from the instruments (whether ACD or CMI) will be more useful in their interactions with their counselors than with other kinds of people. Counselors did not feel the teachers of their schools were well prepared to use results from the instruments.

TABLE A: Reactions of Principals to Pilot Test Instruments

Questionnaires of principals of CMI-tested schools — sent 38; returned 27
Questionnaires of principals of ACD-tested schools — sent 20; returned 16

Items	Test	Degree of Usefulness				Total Response	Weighted Mean
		Not Useful			Very Useful		
How useful do you believe the results will be in your interactions with:							
• your pupils?	CMI	3	9	12	3	27	2.6
	ACD	1	8	5	2	16	2.6
• your teachers?	CMI	3	9	13	2	27	2.5
	ACD	2	4	6	4	16	2.7
• your school counselor?	CMI	3	1	14	9	27	3.1
	ACD	1	1	4	8	14	3.4
• the central office of your school district?	CMI	4	11	8	4	27	2.4
	ACD	2	2	5	5	14	2.9
How useful do you feel the results can be in curriculum planning?	CMI	4	8	12	2	26	2.5
	ACD	1	2	4	6	13	3.2
		Yes		No			
If the assessment had occurred earlier in the school year, do you feel that the results would have been of enough value to you and and your school to justify the time spent in testing?	CMI	22		4		26	
	ACD	14		1		15	

TABLE B: Reactions of Counselors to Pilot Test Instruments

Questionnaires of counselors of CMI-tested schools — sent 56; returned 37
Questionnaires of counselors of ACD-tested schools — sent 29; returned 19

Items	Test	Degree of Usefulness				Total Response	Weighted mean
		Not Useful			Very Useful		
How useful do you believe the results will be in your interactions with:		1	2	3	4		
. individual pupils?	CMI	1	6	16	13	36	3.1
	ACD	3	2	5	9	19	3.1
. groups of pupils?	CMI	3	9	12	11	35	2.9
	ACD	2	8	8	3	21	2.6
. parents?	CMI	2	12	13	9	36	2.8
	ACD	1	7	7	4	19	2.7
. teachers?	CMI	3	9	16	8	36	2.8
	ACD	1	3	11	5	20	3.0
. your principal?	CMI	5	8	16	6	35	2.7
	ACD	1	3	12	4	20	2.9
. the central office of your school district?	CMI	8	9	13	5	35	2.4
	ACD	4	12	2	1	19	2.0
		Degree of Preparation					
		Not Prepared			Very well Prepared		
		1	2	3	4		
How well prepared to use the career education assessment results are most of the teachers in your school?	CMI	12	12	9	1	34	2.0
	ACD	6	7	2	1	16	1.9
		Yes			No		
Have you received instructions on using the results?	CMI	20			14	34	
	ACD	14			5	19	
		Yes			No		
If the assessment had occurred earlier in the school year, do you feel that the results have been of enough value to you and your school to justify the time spent in testing?	CMI	31			3	34	
	ACD	18			1	19	

Table C: Reactions of Teachers to Pilot Test Instruments

Questionnaires to teachers of CMI tested schools - Sent 90; Returned 55
Questionnaires to teachers of ACD tested schools - Sent 52; Returned 33

Items	Test	Degree of Usefulness				Total Response	Weighted Mean
		Not Useful			Very Useful		
How useful do you believe the results could be in your interactions with:		1	2	3	4		
. individual pupils?	CMI	4	11	16	10	41	2.8
	ACD	4	2	5	4	15	2.6
. the class as a group?	CMI	7	14	13	4	38	2.4
	ACD	4	5	5	2	16	2.3
. the school counselor?	CMI	3	8	10	18	39	3.1
	ACD	2	1	4	8	15	3.2
. other teachers?	CMI	6	15	10	6	37	2.4
	ACD	4	3	3	4	14	2.5
. your principal?	CMI	5	16	9	8	38	2.5
	ACD	4	3	3	4	14	2.5
		Not at All			Extensively		
		1	2	3	4		
To what extent should career education be incorporated in your prime teaching responsibility?	CMI	2	14	27	7	50	2.8
	ACD	3	11	12	5	31	2.6
		Yes			No		
Have you received a copy of the results							
. listing each individual pupil?	CMI	30			20	50	
	ACD	11			21	31	
. as a class or school summary report?	CMI	29			15	44	
	ACD	11			20	31	
Have you received any instructions on using the results?	CMI	15			28	43	
	ACD	4			21	25	

Table C (continued)

Item	Test	Degree of Usefulness		Total Response	Weighted Mean
		Yes	No		
If the assessment had occurred earlier in the school year, do you feel that the results would have been valuable enough to justify the time spent in testing?	CMI	32	11	43	
	ACD	16	8	24	

Pupils' Reactions

Upon completing an instrument, each pupil was asked to indicate his feelings about taking the instrument by choosing among the responses, "It was interesting," "Neutral (no strong feelings)" or "A waste of time." Regardless of which instrument they had taken or whether they were in the ninth or the 11th grade, two fifths of the Anglo pupils and three fifths of the minority group pupils indicated that they felt taking the instruments to have been interesting. Among those in the 11th grade,

- the black pupils appear to be slightly more favorably inclined to the CMI and the Anglo (and to a lesser degree the Mexican American) pupils to the ACD.

- the percentages of pupils who indicated that they felt taking the instrument to be a waste of time were low (the highest being 11%, occurring among the Anglo pupils who took the CMI).

The pupils were asked questions regarding difficulties they encountered in taking the instruments. Due to differences

in the way the questions were asked, exact comparison between the two instruments is not possible; however, the data indicate that, for each instrument, the percentage of 11th grade pupils who responded that they

1. found the words or directions too difficult
2. were unable to do their best because of noise or interruptions, or
3. were not given enough time to finish the instrument

did not exceed reasonable tolerance for group administration to Anglo pupils. Room for improvement was strongly evident, in all three areas, with regard to administration to minority group pupils.

The pupils were asked to indicate the kind of situation in which they would prefer to complete the instruments. All of the pupils were given nine different testing situations from which to choose. The choices were the nine possible combinations of three variables (morning or afternoon, large group or regular classroom, all at once or different parts on different days) plus "outside of school." For each instrument, the most preferred testing situation was to receive the instrument in the morning, in a large group (rather than in their regular classroom), and "take it all at once." The combinations which included administration in the morning were strongly favored. Those who completed the ACD were given the additional option of responding that it "doesn't matter." About 30% of the ninth graders and 40% of the 11th graders said it "doesn't matter" in what situation they complete the instrument.

The pupils were asked to indicate how they felt about choosing a career by high school graduation time. For each of the three ethnic groups, about half of the pupils who completed the ACD but only a third of those who completed the CMI chose the response "Everyone should have by then."

Evaluation of Results from the Instruments

Pupils in the 11th grade performed better than did pupils in the ninth grade, regardless of the size, ethnic composition, or geographic location of their campus.

The question of whether the instruments are sensitive to the effects of a career education program implemented by a school could not be attacked directly. Data as to how pupils performed on the instruments prior to receiving a career education program were not available. An indirect approach was attempted. Pairs of campuses were selected. The members of each pair were similar with regard to size, ethnic composition, and geographic location; one member, but not the other member, had offered an Occupational Orientation program in the eighth grade the previous year. The CMI performances of ninth grade pupils of campuses within each pair were compared.

Only one set of comparisons is free of the possibility that any differences in pupil performance between "matched" campuses may be attributable to the inadequacy of matching only on the basis of size, ethnic composition and geographical location. This case involved campuses whose ninth grade enrollments were over 75% Anglo. The pupils whose campus had offered the Occupational Orientation program performed better on some subtests, but poorer on other subtests of the CMI than did pupils whose campus had not offered the program. For pairs of campuses of both small and medium size, the member where Occupational Orientation had not been offered had pupils who gave the better performance on the self-appraisal, the occupational information, and the goal selection parts of the CMI Competence Test. The reverse relationship was found on the problem solving subtest, suggesting that the CMI may be sensitive to instruction in career education problem solving and that this aspect of the Occupational Orientation offering was effective. No investigation of ACD sensitivity was attempted.

As explained earlier, serving the purposes of the pilot testing within the constraints precluded the possibility of obtaining a sample of pupils representative of the population of Texas pupils of grade nine or grade 11. The scores

obtained by the pupils on the instruments cannot be considered representative of scores of Texas pupils, nor can the results from any segment, e.g., ethnic group, be considered representative of that segment of the population. For example, the relationship between black pupils who were tested to the state's population of black pupils is questionable. Nevertheless, the following observations seem useful as being the best available indications as to how responses may differ among pupils of several ethnic groups:

1. The Anglo pupils obtained the highest and the black pupils the lowest mean scores, with regard to

   - each of the six subjects of the CMI,
   - each of the six Occupational Knowledge scales of the ACD, and
   - both the Occupational Preparation Requirements and the Career Planning Knowledge scales of the ACD.

2. The mean ratings given on the Career Planning Involvement scale and the six Explorator Occupational Experiences of the ACD varied little among scales or among ethnic groups. The lowest mean rating was 1.62 (for Mexican American pupils on the Natural, Social, and Medical Sciences Exploratory Occupational Experiences scale). The highest mean rating was 1.89 (for Anglo pupils on the Social, Health, and Personal Services Exploratory Occupational Experiences scale). On the Career Planning Knowledge scale the mean ratings of the three ethnic groups were almost identical (1.88 in the case of black pupils and 1.84 for both the Mexican American and Anglo pupils).

3. When each pupil taking the ACD was asked to pick out the statement which described what he felt would be the most important to him on a job, the response frequencies by ethnic groups were as follows:

	Black	Mexican American	Anglo
A. Working with people I like	7%	10%	7%
B. Being my own boss, doing the work as I want with nobody watching over me	8	9	7
C. Work that I enjoy doing, that is interesting to me	47	50	69
D. Having a steady job where I would not be fired	13	13	8
E. Being responsible for making decisions and for the work of other people	4	7	3
F. Being well paid for my work	22	11	6

Pupils were asked which of the statements described what they felt was least important in a job. Statement B was chosen by about one third of the pupils of each ethnic group as being least important to them.

4. Among those who took the ACD, only 56% of the Anglo, but 81% of both the Mexican American and black pupils had a preference for indoor (as opposed to outdoor) work. Four out of five of the pupils of each ethnic group indicated a preference for working with people rather than working alone. A much higher percentage of Anglo than minority group pupils indicated a preference for a job that involved

   - a variety of tasks rather than the same task, and
   - working with their hands or doing physical labor (as opposed to working at a desk with little physical activity).

5. On the ACD, the pupils were asked to indicate which of 25 job families they were thinking about most. No single family was chosen by more than 15% of the pupils of any ethnic group. Three of the 25 job families each received from 7% to 15% of the choices of each ethnic group, accounting for not less than 27% nor more than 36% of the total responses of each ethnic group. The

job family of Teaching, Counseling, and Social Work was chosen by at least 9% of the pupils of each ethnic group. While 14% of the black pupils chose Nursing and Human care, only 7% of the Anglo pupils did so. Secretarial and Clerical Work was chosen by 15% of the Mexican American pupils, but by only 9% of the black and Anglo pupils. The job family of Medicine and Medical Technology was chosen by 9% of the Anglo pupils but only 5% and 6% of the black and Mexican American pupils respectively.

Three job families were chosen by from 4% to 8% of the pupils of each ethnic group; these job families were (1) Personal Services, (2) Mechanics, Repairing, and Servicing, and (3) Engineering and other Applied Technologies. Although 6% of the Anglo pupils chose the job family of Farming and Ranching, less than 1% of the minority group pupils did so.

6. When the 25 job families were grouped into six categories, the percentages of pupils choosing job families in each category were as follows:

Category of Job Families	Black	Mexican American	Anglo
Personal, Social and Health Services	36%	30%	27%
Sales and Promotion	6	5	5
Business Operations	16	23	19
Industrial Technologies and Trades	21	20	23
Science and Medicine	7	9	14
Creative and Applied Arts	9	10	10

7. When the pupils were asked how sure they were that their choice would be the same in a year, the response "I am not sure at all" was chosen by 11% of the black pupils, 18% of the Mexican American pupils, and 20% of the Anglo pupils. A response to the question was not received from 14% of the black pupils, 6% of the Mexican American pupils, and 4% of the Anglo pupils.

8. An "Educational Emphasis in the Home Index" (Appendix E) was developed from pupils' questions regarding books, encyclopedias, magazines, daily newspapers in their home, and the number of hours they spent watching television. This information was collected in conjunction with the administration of both tests. The Index was developed to study certain factors presented by the pupils' background. According to the totals of the weightings assigned to each question, the pupils were divided into low, middle, and high portions. About one tenth of the Anglo pupils fell in the low portion of the Index and about one tenth of the minority group pupils fell in the high portion. For each ethnic group about three fifths fell in the middle portion.

   For each ethnic group, the mean subtest scores on the CMI or the ACD were lower among pupils in the lower portion of the Index than among pupils in the middle or high portions of the Index. The mean performances of pupils in the middle portion of the Index tended to be closer to those of pupils at the high (rather than the low) portions of the Index. Within each portion of the Index, black pupils attained the lowest, and Anglo pupils the highest, mean subtest scores on either instrument.

   Analysis, by Index of Educational Emphasis in the Home, of responses to the question regarding the job characteristic which each 11th grade pupil considered most important to him revealed that (Appendix F):

   - among black pupils, the percentage making each choice did not differ greatly with the educational emphasis of the pupils' homes,

   - among Mexican American pupils, the percentage choosing the response "Work that I enjoy doing, that is interesting to me" increased as the educational emphasis in the pupils' homes increased,

   - among Anglo pupils,

.. the percentage choosing the response "Work that I enjoy doing, that is interesting to me" was lower among pupils from homes where the educational emphasis was low but did not differ between those from homes of middle and high educational emphasis,

.. a fifth of the respondents in the low Educational Emphasis in the Home category chose the response "Having a steady job where I would not be fired" but only 7% from both the middle and high categories chose that response,

. in none of the educational emphasis categories for any of the ethnic groups did the pupils attach importance to being their own boss or being responsible for making decisions.

Conclusions

1. Little or no difference exists between the two instruments with regard to how useful school personnel believe the results will be in their interactions with their school colleagues or with their pupils.

2. Opinions regarding the usefulness of the results from the instruments differ widely among principals, among counselors, and among teachers; the opinions have little or no relationship to the size, location, or ethnic composition of the campuses on which the personnel are employed.

3. The feelings of pupils toward taking the instruments are not so unfavorable as to discourage the use of the instruments.

4. Most of the 11th grade Anglo pupils are able to understand the words and the directions; for a large segment of the minority group pupils, the data may be invalid or unrealiable because of misunderstandings and other difficulties in administration of the instruments.

5. Pupils prefer to complete the instruments in the morning, in a large group, all at onee.

6. The ninth grade CMI data, although unable to support a definitive statement, suggest that the CMI may be sensitive to the effects of a career education program.

7. Although the pupils who took the ACD were not so selected as to be representative of their ethnic groups, the results are suggestive as to further investigations. The results suggest that:

   - Anglo pupils obtained higher scores on either test than the minority group pupils

   - little or no difference exists among the ethnic groups with regard to pupils' perception of their degree of involvement with exploratory and planning experiences related to careers

   - the most important characteristic in a job for seven out of ten Anglo, but only half the blacks and Mexican Americans, is that the work be enjoyable and interesting

   - about a fifth of the black, but few Mexican American and still fewer Anglo, consider being well paid for their work as being the most important aspect of a job

   - pupils do not attach much importance to being their own boss or to being responsible for making decisions and for the work of other people

   - Mexican American and black pupils are more likely than Anglo pupils to express a preference for indoor work

   - Anglo pupils attach more importance than minority group pupils to doing a variety of tasks and express a greater preference to working with their hands or doing physical labor, and

   - working with people rather than working alone was preferred strongly by all ethnic groups.

LEARNER OUTCOMES FOR CAREER EDUCATION

Overall specifications of what should be accomplished through career education has not been available at the state level. The intent of the Assessment of Career Education Steering Committee was to develop statements of what should be accomplished by students. These statements could serve as operational definitions for career education and could act as benchmarks for planning, needs assessment, and evaluation activities.

The Partners in Career Education project staff assumed the primary responsibility for developing the statements about what should be accomplished. It was agreed that the guiding question for this would be "What does the ideal person look like when he or she is 17 years old and is adequately developed in terms of career education." The point of entry was interpreted as "the 17-year-old school leaver" with the tacit implication that this school leaver may or may not have completed the school program.

Each statement of what should be accomplished was written in a manner that would lend itself to objective measurement. These written statements that tell how the "ideal, career education oriented 17-year-old" should behave are called "learner outcomes."

Development of the Learner Outcomes

The statements of learner outcomes were derived from a broad base. The various sources used were

- search of the literature
- on-site visitation of national and state career education projects
- investigation of regional career education projects, and
- work group meetings.

Work-group meetings, held primarily in the North Texas area, were designed specifically to initiate group interactions. Through these meetings, over 1200 participants were able to give opinions about their expectations for career development in schools. These opinions came from participants with rural and urban experiences, from persons with various ethnic backgrounds, from business people and/or prospective employers, as well as from participants who were educators, parents and students.

The Partners staff developed a procedure for recording the statements obtained from these sources. The key concepts that were given were about attitudes, behaviors, skills, and/or content/knowledge and were not stated in measureable terms. "Career education student characteristic" was the term adopted to encompass these broader concepts. The learner outcomes, then, were written as measureable, exemplary statements to describe the student characteristics. In addition, the characteristics and outcomes were grouped according to the respective Goals for Public School Education in Texas.

This effort produced 343 student characteristics and learner outcomes which are viewed as initial statements, not comprehensive or final. It is the intent of the ACE Steering Committee that the Agency will periodically review and refine these statements.

As these initial statements of student characteristics and learner outcomes were being refined, plans were made to conduct a survey among Texas citizens to get their judgments about which of these were the most important.

Designing the Survey Instruments

As a first step in planning the survey, the statements of student characteristics and learner outcomes were edited so that they could be more easily read by the general public. It was then decided to divide 64 characteristics and 279 outcomes among 10 survey forms having approximately 35 response items each. It was believed that this step was necessary in order to secure maximum participation. The cover of each survey form contained questions to gather information concerning the respondent's occupation, type of community, gender, ethnic background, age, and family

income. Appendix G is an example of the survey form cover. The survey forms were also translated into Spanish to obtain responses from citizens who preferred to react in this language.

On the survey form, each student characteristic was rated by the respondent answering "yes" or "no" to the general question, "Do you think it is the responsibility of the Texas public schools to develop these student characteristics?" Each learner outcome was rated as either "Basic," "Desirable," or "Inappropriate" for a 17-year-old student to have acquired by the time he leaves school in order to function in today's society.

Distribution of the Survey Forms

The sampling technique utilized for the survey was designed to obtain the participation of: one percent of all senior students in the state; a parent of each of the selected senior students; one teacher/administrator and one businessman/member of a professional or civic organization for each senior student selected. The sampling also took into account the geographical location of the high schools; for example, urban or small town, suburb or central city or rural, and the ethnic composition of the student body.

The 20 education service centers within the state were sent appropriate numbers of forms with a recommended list of schools in their region for dissemination. Specific selection procedures based on random selection were provided for each participating school principal. The Career Education Coordinator in each region distributed and collected the forms. The approximate number of survey forms that were returned by each region can be found in Appendix H.

In addition to 20 regional samples, the Texas Education Agency staff distributed approximately 1700 forms to various statewide groups. The intent of this was to collect the perceptions from members of these groups who bring their local and regional perspectives into statewide viewpoints.

The purpose of this survey procedure was not to have a "representative" statewide sample, but to collect a cross-sectional view from various groups of Texans that could be analyzed and reported.

Response to the Survey

Of the 8180 survey forms that were distributed, 6007 were returned for a response rate of 73%.

Because the student characteristics and learner outcomes were distributed among 10 forms, the range in the numbers of persons that responded to each form was a high of 616 on Form B to a low of 557 on Form J.

The information provided by the respondents through answers to the questions on the cover of each survey form provided the following general perceptions about the survey population:

- more parents and educators than students or representatives from business/industry responded
- most of the participants were from medium or large sized cities
- more males than females took part
- 75% of the respondents were Anglo, 12% were black, 11% were Mexican American, and less than one percent American Indians or orientals
- almost 60% were between the ages of 31 and 60, and
- more than 60% had family incomes that ranged from $9,000 to $35,000.

The information provided by the participants showed that various groups of people were represented in large enough proportions to justify the use of their ratings for screeing the student characteristics and learner outcomes.

Table D provides more information about the numbers of persons who responded in each category on each survey form.

Table D: Number of Respondents Answering Background Questions

Background Information Categories		Survey Forms									
		A	B	C	D	E	F	G	H	I	J
Student	N=	151	151	153	157	149	144	144	145	140	132
Parent		280	275	270	268	286	269	278	255	266	247
Educator		223	227	223	204	217	224	217	212	221	208
Business/Industry Representative		131	146	148	145	141	144	135	141	142	137
Neither		11	9	9	10	11	10	7	10	9	10
City over 500,000		86	94	98	84	92	107	80	81	86	88
City 200,000 - 500,000		79	80	85	85	79	65	77	80	84	82
City 10,000 - 200,00 (within 30 miles of metropolitan area)		141	131	131	119	131	125	129	122	140	115
City 10,000 - 200,000 (farther than 30 miles from metropolitan area)		125	152	134	131	132	129	138	138	133	127
City under 10,000		99	96	87	100	103	94	93	86	86	91
Rural area		62	56	64	63	48	64	57	49	48	46
Female		268	284	278	260	279	261	291	253	280	253
Male		333	332	324	331	318	339	295	319	206	304
Afro American/black		67	70	81	61	70	74	59	75	64	68
American Indian		3	5	4	5	4	0	1	3	2	3
Mexican American/Chicano		64	61	74	69	63	67	71	64	58	55
Oriental American		5	2	4	7	6	4	5	6	4	6
Anglo		437	457	419	427	429	429	429	399	430	395
I prefer not to answer		23	30	18	14	18	23	19	23	24	21
Under 20 years		143	140	145	151	140	138	140	132	130	128
20 - 30		76	77	89	73	70	79	78	87	88	76
31 - 45		208	229	210	194	208	226	208	211	203	196
46 - 60		150	142	133	148	148	139	139	116	141	137
Over 60		23	27	18	21	23	14	19	22	23	14
I prefer not to answer		3	5	11	6	8	5	2	7	3	5
Under $2,500		9	11	10	18	12	12	7	11	11	10
2,500 - 4,999		21	18	27	16	21	24	18	10	14	17
5,000 - 8,999		55	57	57	71	58	70	70	59	54	53
9,000 - 14,999		141	169	152	133	176	157	150	140	159	154
15,000 - 19,999		128	119	111	109	110	103	117	125	123	115
20,000 - 35,000		123	110	104	114	111	110	106	116	98	104
Over 35,000		30	30	30	23	15	30	22	15	27	22
I prefer not to answer		86	95	105	93	83	85	82	97	92	75

Results of the Validation Survey

A procedure for judging the opinions of the people who participated in the validation survey was agreed upon by Partners and the ACE Steering Committee. The criteria used for making decisions about student characteristics and learner outcomes may be summarized as follows:

STUDENT CHARACTERISTICS - To be accepted, each student characteristic had to receive a "yes" response rate of 50.1% or more to the question, "Is it the responsibility of the Texas Public Schools to develop the student characteristic?"

LEARNER OUTCOMES - The learner outcomes listed were judged according to the responses they received as either being "basic for all 17-year-olds", "desirable for some 17-year-olds", or "inappropriate for 17-year-olds," For an outcome to be accepted as "basic," a majority (50.1%) of the persons voting on a specific outcome must have rated it as such, and no identifiable population could judge an outcome to have a mean score of less than 1.5 on the following 2 point scale:

2.0 = basic
1.0 = desirable
0 - inappropriate

An identifiable population was defined as a group of 25 or more persons who answered the information questions on the cover sheet of the survey form and did not include categories of response such as "none of above" or "I prefer not to answer," An example of a printout from the computer that was used to select learner outcomes is found in Appendix I.

The results of the survey showed that each learner characteristic was accepted. The "yes" responses totaled 70% or above for each one. In reviewing the results of the learner outcomes, 177 were identified as "basic" (Appendix J). The additional 102 outcomes included in the validation survey were rated as "desirable" since they had a range of mean scores of 0.5 to 1.4 on the 2 point scale. None of the learner outcomes was found to be inappropriate since none of them received a mean score below 0.5 on the scale.

From the beginning of this process a major purpose had been to emphasize the learner outcomes identified as "basic" and to use them as operational definitions for communicating with people and for further study. All of the characteristics were accepted, but many had no outcomes with them that were rated as "basic;" others had so few that it was difficult to relate the characteristics to the outcome.

The "basic" outcomes to be achieved by all Texas students have been sorted into nine new categories to assist in communication. These nine categories may be operationally defined as follows:

Category	Outcomes were included in this category if they dealt with
I - Career Planning and Decision Making	Goal setting; understanding the importance of a planning process; assistance in decision making; career choices
II - Career Information	Identification of sources of occupational information; obtaining information about careers
III - Job Acquisition and Retention	Skills that one should have to locate and interview for a specific job; skills and understandings that one should have to remain employed
IV - Attitudes and Appreciatiation for a Career Success	Attitudes toward work; feelings about task accomplishment
V - Skills in Human Relationships for Careers	Interpersonal relationships; group dynamics; attitudes toward the possession of human relationship skills
VI - Self-investigation and Evaluation for Career Success	Examination of self in relation to careers; assessment of self concept; appraisal of interests and capabilities

VII	Personal/Work/ Societal Responsibilities	Citizenship; relationship with and responsibilities to fellow men, job, etc.
VIII	Economic Factors Influencing Career Opportunity	Understanding how various economic conditions affect a person; how a person interacts in the economy
IX	Education/Career Relationships	Understanding the relationship of education (formal or informal) to career opportunities; understanding the relationship of education or training to specific job requirements; the student's attitude toward education or learning and career opportunities.

Measures Available for Basic Learner Outcomes

Neither of the instruments selected for pilot testing (Assessment of Career Development or Career Maturity Inventory) was developed specifically for measuring the Texas basic learner outcomes in career education. Therefore, there is a lack of congruency between the objectives measured by these tests and the objectives desired by Texans. Both career instruments were built as primarily normative measures whereas the instruments best suited to provide information about specific objectives are criterion or objective-based measures. Even with these qualifications the ACE Steering Committee felt that it was necessary to conduct a pilot test to determine the extent to which the career education outcomes could be measured by instruments already available.

Staff members from the Texas Education Agency and Partners in Career Education project compared each basic outcome with sections or items on the two instruments. The comparison chart found as Appendix K summarizes the judgments of the reviewers about the extent of available measures for specific basic learner outcomes (listed by major category).

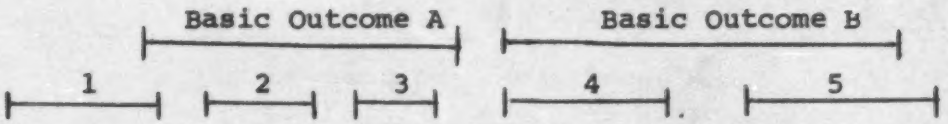
Subjective judgments were the only method available for comparison of outcomes to items. To increase objectivity, the following procedures were utilized:

1) More than one staff member made each comparison

2) Comparisons were judged as:

yes	- the test item or section measures the outcome
no	- the test item or section does not measure the outcome
partial	- the test item or section measures some portion of the outcome

3) Items or sections that collected substantial information not relevant to a specific outcome were not included as "partial" measures. For example:



If the bar graphs represent the behavior included in outcomes A and B, then measures 2 and 3 would be listed as partial measures of A, and 4 would be listed as partial for B. Measures 1 and 5 would not be considered as partial measures.

4) Reviewers were required to give a reason for judging a measure as "partial". The right hand column of the chart (Appendix I) summarizes these reasons.

Conclusions on Measures Available

The comparison chart (Appendix I) may be summarized as follows:

Number of Basic Outcomes	ACD	CMI
A. Measured	0	0
B. Measured partially	19	22
C. Not measured	158	155

A count of the measures available by categories of basic outcomes is:

	NUMBER OF BASIC OUTCOMES						
		Measured By		Partially Measured		Not Measured	
Category	In Category	ACD	CMI	ACD	CMI	ACD	CMI
I	12	0	0	5	8	7	4
II	12	0	0	5	2	7	10
III	10	0	0	0	1	10	9
IV	25	0	0	1	3	24	22
V	25	0	0	0	0	25	25
VI	17	0	0	4	5	13	12
VII	25	0	0	0	1	25	24
VIII	33	0	0	2	1	31	32
IX	18	0	0	2	1	16	17
Totals	177	0	0	19	22	158	155

Next Steps

In addition to the ACE Steering Committee activities completed during 1972-73, the Agency has adopted the following positions:

1. Career Education is one of three high priorities for long-term attention in Texas.

2. Career Education efforts should be planned and coordinated in order to maximize impact on the present system of elementary and secondary education.

Current trends of evaluation and accountability provide another basis for the ACE Steering Committee to recommend that future assessment activities in career education should have the following characteristics:

- Measure directly as many as possible of the basic learner outcomes.

- Provide information useful to classroom teachers.

- Serve as the basis for curriculum planning and development for career education.

- Support evaluation of long-term gains in the career development of Texas pupils.

If the above characteristics are to be attained by a measurement instrument, it will probably need to be criterion-referenced. Considerable developmental effort is needed to produce an instrument which is based on Texas objectives, sensitive to instruction, and provides useful information for the diagnosis of individual learner needs.

Prior to the availability of an adequate measurement system, schools and regional education service centers should be encouraged to determine which learner outcomes are being measured by commercial or custom-made career education instruments. Comparison of measured objectives with intended outcomes will provide more reliable information relevant to the career development of Texas pupils. In addition,

curriculum specialists should now be able to

- include the 177 basic outcomes in curriculum materials
- distribute the basic outcomes across subject-matter areas and develop a hierarchy of developmental objectives (K-12) which will result in the achievement of the basic outcomes
- identify alternative teaching strategies and learner activities to achieve specific outcomes
- evaluate resource materials in the service of achieving specific outcomes
- determine teacher competencies necessary for applying alternative strategies to achieve various learner outcomes, and
- conduct similar activities for those outcomes judged to be desirable for some students.

APPENDIX A

STUDY QUESTIONS FOR ASSESSMENT IN CAREER EDUCATION

1. What concerns are included in the area of career development for Texas pupils?

   Answer - Career education is concerned with the process by which one becomes self-actualized and includes:

   - understanding the world of work and attitudes toward it
   - understanding the relationships which exist between education and career opportunity
   - understanding the economic and social structures of our society and how they influence the ways people support themselves
   - making informed decisions concerning how they influence the ways people support themselves
   - acquiring marketable skills as preparation for earning a living
   - commitment to sharing responsibility for community well-being
   - flexibility toward change
   - skills in human relationships.

2. What learner objectives should be achieved to satisfy the commitment of elementary and secondary schools in the area of career education?

   Answer - The Goals for Public School Education in Texas state that all students should achieve

   - competence and motivation for self-evaluation, self-instruction, and adaptation to a changing environment
   - knowledge of the fundamental economic structure and processes of the American system and of the opportunities for individual participation and success in the system, and
   - occupational skills prerequisite to enter and advance in the economic system and/or academic preparation for acquisition of technical or professional skills through post-high school training

- competence in the application of economic knowledge to practical economic functions such as planning and budgeting for the investment of personal income, calculating tax obligations, financing major purchases and obtaining desirable employment, and

- competence in personal and social relations.

The goals have been further defined in terms of learner behaviors for career education.

By the end of the elementary school years, students should:

- demonstrate wholesome attitudes toward the career choices of people; toward work, as a means of achieving many satisfactions; and toward work in relation to themselves

- demonstrate an understanding of the life styles, values, major duties and responsibilities involved in a large number of careers

- demonstrate their ability to apply basic economic concepts to problems which can be understood by children of their age and experience level

- show interest in exploring many careers, and

- know how to obtain additional information about careers.

At the end of their middle or junior high school experiences, students should:

- have in-depth knowledge of several of the major career fields

- have become aware of many additional career fields

- have explored rather thoroughly their own values, interests, and educational achievements

- have firsthand acquaintance with the economic system — as consumers and as observers of those who work to produce goods and perform services, and

- be prepared to select a tentative high school educational plan best suited to their individual needs and desires.

In addition to continuing the objectives of previous levels, each high school student should be prepared to:

- become gainfully employed at an entry level appropriate to his career objectives upon leaving high school

- enter a junior college, technical institute, preparatory school, apprenticeship program, or senior college for continued career preparation,

- or both.

3. To what extent do Texas pupils achieve the objectives listed in Study Question #2 - specifically:

   - Do Texas pupils have sufficient knowledge about careers?
   - Have Texas high school students developed desirable attitudes toward work?
   - Are Texas pupils competent in applying their knowledge of the process of choosing a career?
   - Are Texas student prepared to get and to hold a job or to make the adaptations required for necessary job shifts?

APPENDIX B

FLOWCHART FOR ASSESSMENT OF CAREER EDUCATION - 1972-73
ACE Steering Committee Established
Pilot Testing Selected for 72-73
RFP Letters Mailed
LEA & ESC Review of ACE
Instruments Selected
Arrangements Finalized with Pilot Schools
Pretest Workshops
Test Administration Completed
Evaluation of Pilot Testing Completed
Report on Outcome Measurement with Available Tests
DECISION: Statewide Assessment: OR Instrument Development for 73-74
List of Desired Outcomes That Can Be Measured
Consensual Validation Procedures
Pilot Testing In Regions X & XI
Staff Development & On-Site Visitation
Strategy Selection
TEXAS EDUCATION AGENCY ACTIVITIES
COOPERATIVE ACTIVITIES
"PARTNERS IN CAREER EDUCATION" ACTIVITIES
Project Staffed
Research Literature—List of Outcomes Initiated
Work Group Procedure Developed
Staff Development for Work Groups
On-Site Visitations
Work Group Meetings Completed
Lists of Selected Outcomes Combined with Work Group Results
List of Learner Outcomes Submitted for Review
Validation of Learner Outcomes Completed
Final List of Desired Learner Outcomes

APPENDIX C

INSTRUMENTS SUBMITTED IN RESPONSE TO REQUEST FOR MEASUREMENT INSTRUMENTS

1. Assessment of Career Development (American College Testing Program, Iowa City, Iowa, 1973).
2. Attitudes Toward Career Education (Ohio State University, Columbus, Ohio, 1972).
3. Career Maturity Inventory (CTB/McGraw-Hill, Monterey, California, 1973).
4. Differential Aptitude Tests (Psychological Corporation, New York, New York, 1966).
5. Educational Development Series (Scholastic Testing Service, Bensenville, Illinois, 1973).
6. Minnesota Vocational Interest Inventory (Psychological Corporation, New York, New York, 1966).
7. Ohio Vocational Interest Survey (Harcourt, Brace, & Jovanovich, Inc., New York, New York, 1972).
8. Oregon Awareness Survey (Science Research Associates, Inc., Chicago, Illinois, 1971).
9. Self-Directed Search (Consulting Psychologists Press, Palo Alto, California, 1970).
10. Self-Report Inventory (Evaluation Research Associates, Inc., Austin, Texas, 1971).
11. Student Information System (Behavorial Consultants, Salt Lake City, Utah, 1972).
12. Survey of Study Habits and Attitudes (Psychological Corporation, New York, New York, 1967).
13. Vocational Planning Inventory (Science Research Associates, Inc., Chicago, Illinois, 1968).

APPENDIX D

DISTRIBUTION OF CAMPUSES AMONG EDUCATION SERVICE CENTER REGIONS

Region	Grade 9 only	Grade 9 and 11		Grade 11 only		Total
	CMI	ACD	CMI	ACD	CMI	
1	2		2	1		
2				2	1	3
3				1	1	2
4	2			1		3
5				1	2	3
6				1	1	2
7				1	1	2
8				1	1	2
9				1	1	2
10	2	1	2	1		6
11	2	1	2	2	1	8
12				1	2	3
13	2			1		3
14					2	2
15					2	2
16					2	2
17					2	2
18				1	1	2
19				1	1	2
20		1	1			2
Total	10	3	7	17	21	58

RESPONDENTS TO THE ACD AND THE CMI

	Approximate Fall Enrollment	Respondents				
		Total	Black	Mexican American	Anglo	Oriental, American Indian, or Unknown
Grade 9						
ACD	1500	1088	193	369	406	120
CMI	4900	4124	777	1289	1438	620
Grade 11						
ACD	3000	2419	471	615	847	486
CMI	4500	3314	363	735	1471	745

CAMPUS/GRADE UNITS BY SIZE AND ETHNIC COMPOSITION

Predominant ethnic composition *		Black		Mexican American		Other (mostly Anglo)		Mixed Black and Other*		Mixed Mexican American and Other*		Mixed Mexican American and Black*		All	
Enrollment of Grade		Gr. 9	Gr. 11	Gr. 9	Gr. 11	Gr. 9	Gr. 11	Gr. 9	Gr. 11	Gr. 9	Gr. 11	Gr. 9	Gr. 11	Gr. 9	Gr. 11
More than 300	ACD	1	1	1	1	1	1							3	3
	CMI	1	1	1	1	2	1					1		5	3
200-299	ACD						1		1					-	2
	CMI			2		2				1				5	-
100-199	ACD				2		1		1		1			-	5
	CMI	1			1	3	6		2		2			4	11
50-99	ACD				1		3		2					-	6
	CMI			2	1	1	2		1		2			3	6
Less than 50	ACD						2		2					-	4
	CMI					1	2		2		2			1	7
All	ACD	1	1	1	4	1	8		6	-	1	1	-	3	20
	CMI	2	1	6	2	9	12		6	1	6	-	-	18	27

*A campus is placed in a "mixed" category if two ethnic groups each constitute at least a fourth of the population of the grade to be tested; in no case does a third ethnic group constitute as much as 15% of the population.

(D continued)

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OCCUPATIONAL ORIENTATION SITES

Enrollment	Predominant ethnic composition *						
	Black	Mexican American	Other (mostly Anglo)	Mixed Black and other	Mixed Mexican American and Other	Mixed Mexican American and Black	All
> 300			1			1	2
200-299					2		2
100-199	1		2				3
50-99		1					1
< 50			1				1
All	1	1	4	0	2	1	9

*A campus if placed in a "mixed" category if two ethnic groups each constitute at least a fourth of the population of the grade to be tested; in no case does a third ethnic group constitute as much as 15% of the population.

(D continued)

APPENDIX E

INDEX OF EDUCATIONAL EMPHASIS IN THE HOME

The index was constructed from the pupils' responses to five items.

Item		Weight Assigned to Response
1. Does your family take any magazines at home?		
	yes	1
	no	0
2. Does your family take any daily newspapers at home?		
	yes	1
	no	0
3. Does you family have any encyclopedias at home?		
	yes	1
	no	0
4. Outside of school, how long do you usually watch TV on <u>each school day</u>?		
	none or less than 1 hour	0
	1 or 2 hours	1
	3 or 4 hours	2
	5 or 6 hours	1
	More than 6 hours	0
5. How many books does your family have at home?		
	Less than 25 books	0
	25 - 50 books	1
	50 - 100 books	2
	100 - 200 books	3
	200 or more books	5

The maximum index score is 10. Low, middle, and high categories were established as follows:

Low — an index of 3 or less
Middle — an index of 4 to 7, inclusive
High — an index of 8 or higher

PERCENTAGE OF 11TH GRADE PUPILS BY "EDUCATIONAL EMPHASIS IN HOME" CATEGORY AND BY ETHNIC GROUP WHO CHOSE STATEMENTS DESCRIBING WHAT THEY FELT WOULD BE MOST IMPORTANT TO THEM ON A JOB

Response Choice \ Ethnicity	Black			Mexican American			Anglo		
Educational Emphasis in the Home	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	102	288	80	157	387	65	73	486	276
A. Working with people I like	12%	5%	7%	12%	9%	8%	5%	7%	8%
B. Being my own boss, doing the work as I want with nobody watching over me	9	8	8	9	9	8	3	8	8
C. Work that I enjoy doing, that is interesting to me	42	49	45	45	51	58	56	70	71
D. Having a steady job where I would not be fired	15	11	14	12	14	8	21	7	7
E. Being responsible for making decisions and for the work of other people	1	5	4	9	6	8	10	2	1
F. Being well paid for my work	21	22	22	13	10	11	5	6	5
Total	100%	100%	100%	100%	99%	100%	100%	100%	100%

APPENDIX G

EXAMPLE SURVEY FORM COVER PAGE

A SURVEY CONCERNING DESIRABLE CHARACTERISTICS AND OUTCOMES FOR SEVENTEEN YEAR OLD STUDENTS

(B)

ESC Region_____

The Texas Education Agency and "Partners in Career Education" are gathering data concerning desirable characteristics and outcomes (skills, attitudes, behaviors and knowledge) for the seventeen year old student. The results will contribute to curriculum development and appropriate measurement instruments for Career Education. This is your opportunity to affect education in the State of Texas.

INSTRUCTIONS: Please answer the following questions by circling the number to the right of your answer. Your responses will remain completely anonymous.

A. Are you:

- Student 1
- Parent 2
- Neither 3

B. Are you:

- Educator 1
- Business/Industry Representative 2
- Neither 3

C. What type of community do you live in?

- City over 500,000 1
- City 200,000 - 500,000 2
- City 10,000 - 200,000 (within 30 miles of metropolitan area) 3
- City 10,000 - 200,000 (farther than 30 miles from metropolitan area) 4
- City under 10,000 5
- Rural area 6

D. Are you:

- Female 1
- Male 2

E. Are you:

- Afro-American/Black 1
- American Indian 2
- Mexican American/Chicano 3
- Oriental American 4
- Anglo 5
- I prefer not to answer 6

F. What is your age?

- Under 20 years 1
- 20 - 30 2
- 31 - 45 3
- 46 - 60 4
- Over 60 5
- I prefer not to answer 6

G. What was your total family income from all sources (wages of all family members, social security, security, pensions, bonuses, overtime, etc.) in 1972?

- Under $ 2,500 1
- 2,500 - 4,999 2
- 5,000 - 8,999 3
- 9,000 - 14,999 4
- 15,000 - 19,999 5
- 20,000 - 35,000 6
- Over 35,000 7
- I prefer not to answer 8

APPENDIX H

NUMBER OF SURVEY FORMS RETURNED

Regional Service Center Areas		Approximate Number Received
Edinburg	I	187
Corpus Christi	II	249
Victoria	III	42
Houston	IV	865
Beaumont	V	206
Huntsville	VI	85
Kilgore	VII	220
Mount Pleasant	VIII	119
Wichita Falls	IX	99
Richardson (Dallas)	X	895
Fort Worth	XI	575
Waco	XII	185
Austin	XIII	124
Abilene	XIV	249
San Angelo	XV	88
Amarillo	XVI	118
Lubbock	XVII	175
Midland	XVIII	161
El Paso	XIX	196
San Antonio	XX	300
State Groups		869
Total		6,007

APPENDIX I

COMPUTER PRINTOUT FOR LEARNER OUTCOMES

DESIRABLE CHARACTERISTICS AND OUTCOMES SURVEY
PARTNERS IN CAREER EDUCATION
QUESTIONNAIRE A

19. SHOULD BE WILLING TO COMMUNICATE, PROJECT HIS THOUGHTS AND/OR EXPRESS HIS FEELINGS.

	YES/ BASIC		NO/ DESIRABLE		INAPPROPRIATE		MEAN	N
	F	%	F	%	F	%		
STUDENT	102	67.5	47	31.1	2	1.3	1.7	151
PARENT	222	79.3	58	20.7	0	0.0	1.8	280
EDUCATOR	168	75.7	51	23.0	3	1.4	1.7	222
BUSINESS/INDUSTRY	106	79.7	27	20.3	0	0.0	1.8	133
NONE OF ABOVE	8	80.0	2	20.0	0	0.0	1.8	10
CITY OVER 500,000	62	72.1	24	27.9	0	0.0	1.7	86
CITY 200,000 - 500,000	55	70.5	22	28.2	1	1.3	1.7	78
CITY 10,000 - 200,000 (< 30 MI.)	112	78.9	30	21.1	0	0.0	1.8	142
CITY 10,000 - 200,000 (> 30 MI.)	93	75.0	30	24.2	1	0.8	1.7	124
CITY UNDER 10,000	70	70.7	29	29.3	0	0.0	1.7	99
RURAL AREA	50	80.6	10	16.1	2	3.2	1.8	62
FEMALE	204	76.1	62	23.1	2	0.7	1.8	268
MALE	247	74.2	84	25.2	2	0.6	1.7	333
AFRO-AMERICAN/BLACK	50	73.5	16	23.5	2	2.9	1.7	68
AMERICAN INDIAN	2	66.7	1	33.3	0	0.0	1.7	3
MEXICAN AMERICAN/CHICANO	45	70.3	19	29.7	0	0.0	1.7	64
ORIENTAL AMERICAN	4	80.0	1	20.0	0	0.0	1.8	5
ANGLO	332	76.3	101	23.2	2	0.5	1.8	435
I PREFER NOT TO ANSWER	15	65.2	8	34.8	0	0.0	1.7	23
AGE UNDER 20 YEARS	97	67.8	44	30.8	2	1.4	1.7	143
AGE 20 - 30	56	74.7	19	25.3	0	0.0	1.7	75
AGE 31 - 45	161	77.0	47	22.5	1	0.5	1.8	209
AGE 46 - 60	121	80.7	29	19.3	0	0.0	1.8	150
AGE OVER 60	18	78.3	5	21.7	0	0.0	1.8	23
I PREFER NOT TO ANSWER	1	33.3	1	33.3	1	33.3	1.0	3
INCOME UNDER $ 2,500	8	88.9	1	11.1	0	0.0	1.9	9
INCOME OF 2,500 - 4,999	17	81.0	4	19.0	0	0.0	1.8	21
INCOME OF 5,000 - 8,999	43	78.2	12	21.8	0	0.0	1.8	55
INCOME OF 9,000 - 14,999	111	78.7	30	21.3	0	0.0	1.8	141
INCOME OF 15,000 - 19,999	94	73.4	34	26.6	0	0.0	1.7	128
INCOME OF 20,000 - 35,000	92	75.4	29	23.8	1	0.8	1.7	122
INCOME OVER 35,000	25	83.3	5	16.7	0	0.0	1.8	30
I PREFER NOT TO ANSWER	57	65.5	28	32.2	2	2.3	1.6	87

APPENDIX J

1973 Validation Results

BASIC LEARNER OUTCOMES FOR CAREER EDUCATION

Pages 48-63 have been omitted for this printing. A separate document entitled "Basic Learner Outcomes for Career Education" is available from the Division of Program Planning and Needs Assessment.

COMPARISON CHART: BASIC OUTCOMES/AVAILABLE MEASURES

I. Career Planning and Decision Making

Basic Outcome Number	Measures Available	Comments on Partial Measurement
1	CMI – No Measurement	
	ACD – Unit 5 (Item 24) – partial	Measures importance not definition
2	CMI – Part I Knowing Yourself, (Items 1–20) – partial	The outcome emphasizes application of decision making steps and the emphasis of these parts of the CMI is on self appraisal and career choice.
	Part IV Looking Ahead, (Items 61–80) – partial	
	ACD – No Measurement	
3	CMI – Attitude Scale (Items 11, 13, 29, 32, 39, 44, 46, 47) – partial	Items emphasize attitudes about "how to choose a career"
	ACD – Unit 2 (Items 1–3) – partial Job Values; Unit 4 (Item 35) – partial	Items deal with characteristics that are important to one in choosing a career. Broad idea of job satisfaction from item 35.

I. Career Planning and Decision Making

Basic Outcome Number	Measures Available	Comments on Partial Measurement
5	CMI - Part IV Looking Ahead, (Items 61-80) - partial	Measures ability to sequence steps of preparation for specific occupations.
	ACD - Part I, A, 2 - Occupational Preparation Requirements Scale - partial	Relates to career direction alternatives only in terms of specific occupations.
7	CMI - Part V, What Should They Do (Items 81-100) - partial	Only a few items deal specifically with personal resourcefulness in problem solving.
	ACD - No Measurement	
8	CMI - Attitude Scale (Item 45) Competence Test (Items 85, 92) - partial	Does not measure students' realization of benefit.
	ACD - Unit 4 (Item 43) - partial	One limited example is measured.
9	CMI - Competence Test, Part IV, Looking Ahead - partial	More of a measure of knowledge about training steps necessary for different career fields rather than "putting" first things first.
	ACD - No Measurement	

(K continued)

I. Career Planning and Decision Making

Basic Outcome Number	Measures Available	Comments on Partial Measurement
11	CMI - Part V, (Items 81, 83, 90, 93, 97) - partial	Items deal with a limited role for counselors.
	ACD - Unit IV, Part C, Help Wanted Checklist (Items 46-54) - partial; Unit 4 (Item 42) - partial	Assumes that student understands that the counselor should assist and then investigate areas of need. Item 42 evaluates help from counselor.
12	CMI - Attitude Scale (Items 7, 9) partial	Measures a limited number of factors that might influence life-styles.
	ACD - No Measurement	

II. Career and Occupational Information

1	CMI - Competence Test (Items 85, 92) - partial	Measures limited instances and only assumes realization of benefit
	ACD - Part IV Looking Ahead (Item 40) - partial	Evaluates one aspect of benefit in one situation
3	CMI - Part III, Choosing a Job, (Items 41-60) - partial	Student matches possible occupations with personal qualifications for a sample of career directions, not just his/hers
	ACD - No Measurement	

(K continued)

II. Career and Occupational Information

Basic Outcome Number	Measures Available	Comments on Partial Measurement
4	CMI – No Measurement	
	ACD – Unit 4 (Items 33–37) – partial	Asks related questions about two job possibilities
5	CMI – No Measurement	
	ACD – Part IV, Knowing About Jobs (Items 29) – partial	Asks about his knowledge of one source
7	CMI – No Measurement	
	ACD – Unit 2 (Items 4–7) – partial	Limited job characteristics are judged by student
9	CMI – No Measurement	
	ACD – Unit 4 (Items 34–38) – partial	Student is asked some general questions about his/her career direction and preparing for it

III. Job Acquisition and Retention

10	CMI – Part IV – partial	Measures vertical steps to become employed at a certain level
	ACD – No Measurement	

(K continued)

IV. Attitudes and Appreciation for Career Success

Basic Outcome Number	Measures Available	Comments on Partial Measurement
2	CMI - Attitude Scale (Item 35) - partial	Gives indication of students' attitudes toward quality - not self concept
	ACD - No Measurement	
14	CMI - Attitude Scale (Items 6, 17, 49, 50) - partial	Measures his attitude (involvement) toward career choice, but not whether he will seek help
	ACD - Unit IV, Part C, Help Wanted Checklist - partial	Identifies areas in which the student feels he needs help; no information on his involvement in career decision making
16	CMI - Attitude Scale (Items 4, 7,8,9,14,24,35,47) - partial	Asks the student to respond to different attitudes toward work but does not measure his/her ability to identify different attitudes.
	ACD - No Measurement	

VI. Self Investigation and Evaluation for Career Success

1	CMI - Part IV (Items 81,83, 97) - partial	Measures perception of assistance available only from school counselors
	ACD - Unit IV, Part B. (Items 44 and 45) - partial	Measures only availability of counselors for assistance

(X continued)

VI. Self Investigation and Evaluation for Career Success

Basic Outcome Number	Measures Available	Comments on Partial Measurement
3	CMI - No Measurement	
	ACD - Unit II, Job Values and Working Conditions Preferences - partial	Measures some student interests and preferences but does not relate to a career direction
4	CMI - Part I, Knowing Yourself (Items 1-20) - partial Attitude Scale (Items 5, 12 25, 38, 45) - partial	Collects information on some influences for some jobs
	ACD - No Measurement	
5	CMI - Attitude Scale (Item 27) - partial; Competence Test, Part I, Knowing Yourself (Items 1-20) - partial	Asks about trouble in preparing for his job; measures need for others to recognize limitations
	ACD - Unit IV, Part C, Help Wanted Checklist - partial	Indicates that student recognizes the need for certain assistances.
16	CMI - Part V, What Should They Do? (Items 81-100) - partial	Measures the need for other persons to make adjustments in the area of career choice — not in context of changing times.
	ACD - Unit 5, Career Planning Knowledge (Item 22) - partial	Measures the need for other persons to make adjustments in the area of career choice — not in context of changing times

(K continued)

VII. Personal/Work/Societal Responsibilities

Basic Outcome Number	Measures Available	Comments on Partial Measurement
19	CMI - Attitude Scale (Items 13, 39) - partial	Asks attitude toward helping others not goals of society
	ACD - No Measurement	

VIII. Economic Factors Influencing Career Opportunity

2	CMI - Attitude Scale (Item 31) - partial	Measure infers that technology causes job changes
	ACD - Part V (Item 22) - partial	Measure infers that technology causes job changes
4	CMI - No Measurement	
	ACD - Part V (Item 22) - partial	Measures possible changes in jobs but does not relate to technology as cause
10	CMI - Attitude Scale (Item 8) - partial	Measures attitude rather than understanding
	ACD - No Measurement	

IX. Education/Career Opportunity Relationships

1	CMI - Part III (Item 55) - partial	Measures one relationship
	ACD - No Measurement	

(K continued)

IX. Education/Career Opportunity Relationships

Basic Outcome Number	Measures Available	Comments on Partial Measurement
2	CMI - No Measurement	
	ACD - Unit VI - partial	Asks students to identify some of their in-school experiences and reports by clusters
3	CMI - No Measurement	
	ACD - Unit VI - partial	Asks students to identify some of their out of school experiences and relates these to occupational clusters

(K continued)